

### Amendments to the Specification:

Amend the **abstract** to read as follows:

Systems and methods are disclosed for establishing a mobile network in which each mobile unit, such as a car, truck or other vehicle equipped with the multi—sensors, processor and receiver/transmitter of the invention, becomes a node able to receive and transmit a wide variety of information, including for example, information about traffic conditions, vehicle mechanical/electrical status, interactive game playing information, streaming audio and video, email, and voice mail. In one aspect, ~~the invention uses~~ multi-sensor fusion technology is used to determine the best value of a monitored variable, for example, the real time locations of each mobile unit, ~~that is then optionally~~ may be communicated to others via the network. ~~The system of the invention also provides~~ In addition, a new method of traffic control using real time traffic positioning and density data is disclosed. ~~The invention also provides~~ Further, methods and systems for enhancing driver safety are disclosed. In another aspect, the system may optionally use a unique secure dynamic link allocation system to improve the information transfer from one node (mobile unit) to another and to other networks, such as the Internet.

Amend **paragraph [0060]** to read as follows:

In accordance with the invention, a specific communications pathway or link is selected for communication from any one of the mobile units 1200 to another or the Internet, for example. Thus, if mobile unit A desires to communicate with a fast food restaurant, for example, to place an order before arriving, then order information from mobile unit A may be communicated through or via mobile units C, and F and thence through the Internet; or alternatively via mobile unit B, then F and thence through the Internet. Other pathways are also possible and readily ascertainable, from inspection of ~~Fig. 1~~ Fig. 2. In accordance with the invention, the most efficient pathway is selected based on predetermined criteria, such as for example, proximity of the other mobile units 1200 to mobile unit A, and security or integrity of the link as discussed below.

Amend **paragraph [0068]** to read as follows:

A sending system software 150 is preferably implemented in a session layer 152, and includes a set of virtual sockets 154 corresponding to transport services typically provided by standard transport software implementing the communications protocols 144. Virtual sockets 154 are transparent to applications running in application layer 142 in that messages passed to virtual sockets 154 by the applications are handled as if virtual sockets 154 were operating as transport services. However, virtual sockets 154 handle messages differently from transport software associated with a particular link. Rather, virtual sockets 154 work in conjunction with a protocol manager 156 and a security manager 158, and a ~~link manager 160~~link manager 159 of sending system software 150 to isolate applications running in application layer 142 from various communications network transmission systems and links 161 accessed through standard networking software operating in the transport layer 162, the network layer 164, and/or the data link layer 166.

Amend **paragraph [0081]** to read as follows:

Fig. 7C illustrates operation of the link manager component and its interface with the link controllers. First, logic in the link manager can segment a message into any number of segments, based on the communication links available, latency or queue size of each link, and the link choose parameters mentioned earlier such as priority, message size, and message type. Segmenting a message over two or more communication links has the potential for increased bandwidth as well as enhanced security. The link manager then directs each segment to a selected link. For example, as illustrated in Fig. 7C, the link manager can employ a segment link routing switch 264, which may be implemented in software and/or hardware. The link manager may direct a first segment to an IBS link 266. “IBS” refers to in band signaling, a technique for transmitting data at a low data rate within the voice channel of a wireless telephone communication link. Other links, for example, link 270, may be unavailable at the present time, or the link manager may determine ~~that~~that link 270 is inappropriate for the present message. Another segment may be routed by the link manager to an SMS link 272, referring here to the short message service provided by some wireless carriers. When the link manager routes a segment of data to a selected link, it appends a segment number to the data as shown at 268. In Fig. 7C, a third segment is routed to a CDPD link 274. Each of the link controllers 266, 272, 274, etc. may include a buffer and attends to

the transmission tasks generally associated with the transport and network layers of the OSI model. Each data segment is treated by the link controller as a complete message. That message typically will be further partitioned into packets for transmission over the data link and physical layers. Thus, the IBS link controller 266 can partition the assigned segment into a plurality of packets, for example, packet 278. Each packet includes at least a header, packet number, and payload. The header is specific to the corresponding link type. So, for example, the header of packet 278 generated by the IBS link 266 is an IBS type of header.

Amend **paragraph [0084]** to read as follows:

As indicated in Fig. 7B, the various segments of the transmitted message will be reassembled at the receiving node. The process is largely an “undoing” of the segmentation process undertaken at the sending node. Briefly, each communication link receives a series of packets which that link can then reassemble into a complete segment, optionally employing error checking and correction as are known in the art. Each link controller forwards the received segment, including the segment identification information (see 268) to the segment link routing switch 264. Based on the segment identifiers, the link manager logic controls the link routing switch to reassemble the complete message as indicated generally in the reassembly step in Fig. 7B.

Amend **paragraph [0095]** to read as follows:

System 500 further includes an operator interface module 516 which can be used for interacting with an operator through keyboard, visual display, hands-free audio channel, etc. Alternatively, the communications system 500 can interact with the operator through the vehicle's existing driver interface systems. In such an embodiment, interactions with the user related to communications are transferred via a car-bus adapter bridge 510 to the ~~vehicle bus 520~~ vehicle bus 512. The adapter bridge 510 provides both electrical and logical transformations as necessary for communication between the communication bus and the vehicle bus. This enables the communication system to, for example, display messages to the operator via the dashboard display system 514 coupled to the vehicle bus 512. The adapter bridge 510 is also useful for coupling the communication system to the vehicle audio subsystem 530. Other vehicle subsystem such as the air bag system 532 and GPS system 534 are shown by way of example.